## SOUTH CAROLINA ELECTRIC & GAS COMPANY ELECTRIC COST OF SERVICE STUDY 12 MONTHS ENDED MARCH 31, 2004

The Company's electric cost of service study develops the rates of return for the various classes of service. These classes generally reflect different rate schedules of the Company and were established based on similarity of customer characteristics. The classes of service for this cost of service study are as follows:

<u>Class</u>	Rate Schedule
Residential	1, 2, 5, 6, 8
Small General Service	3, 9, 10 11, 12, 13, 14, 15, 16, 19, 22
Medium General Service	20, 21, 21A
Large General Service	23, 24, Contracts
Street Lighting	17, 18, 25, 26, Contract Lighting, Subdivision Lighting

The rate of return for each class of service is developed by a procedure fully allocating total revenues, expenses, and rate base. The operating expenses for each class of service are deducted from the operating revenues for that class to develop its operating return. Prescribed additions and deductions are then made to derive the allocated total income for return which is divided by the allocated total original cost rate base to determine the rate of return for each class of service.

Expenses and rate base items are first assigned to functional groups based on the usage of plant facilities. Each of these functional groups is then separated into items which are directly assignable to a particular customer or class of service and those that are to be allocated to all customers or classes of service. Each cost item is then further broken down into one or more of the cost causations – demand, energy, and customer. After the above steps have been completed, each cost component of each function is allocated to the appropriate classes in the manner in which it is incurred.

To expedite the computations, cost of service computer software was used to perform the mechanical operation of allocating the cost and rate base items from developed demand, energy, and customer data and from dollar amounts internally

calculated. Once this was complete, the cost of service program computed the dollar amounts of each functionalized item allocated to each class of service and calculated a rate of return for each class.

### I. Functionalization of Cost and Expenses

South Carolina Electric & Gas Company utilized accounting systems prescribed by the Uniform System of Accounts of the Federal Energy Regulatory Commission. These classifications prescribe precise accounting procedures for reporting on revenue, expense, and balance sheet items including utility plant. The plant accounting system also provides for segregation of both plant and the related accumulated provision for depreciation into well recognized functional categories.

The operating income is segregated into standard accounts and groups which cover all operating and maintenance expenses for the various categories of utility plant as well as other revenue deductions. These categories of plant and expense accounts relate to production, transmission, distribution, and general plant, and also to such customer expenses as service and information, sales, customer accounting, and general and administrative. These segregations were used in the process of identifying plant and expense for the allocation process.

### **II. Cost Components**

There are three causation components which are identified as follows.

#### (A) Demand

Demand costs were classified as those costs which were incurred in proportion to the kilowatts of demand imposed on the various segments of the system. Costs which were demand related were the major portion of the investment and related expenses in the production and transmission facilities and a portion of the distribution system.

Analysis was made of the manner in which the system was designed to meet the requirements of the customers. It was determined that two different demand responsibility methods were appropriate for allocating the demand costs to properly reflect the manner in which they were incurred by the Company. It was necessary to determine the demands of the various customer classes prior to making the allocations. In some instances, the data was available from Company records. In others, it was not

available. In order to obtain data on customers not available from Company billing or dispatching records, the Company's class load research was used to obtain the remaining load responsibilities.

### (B) Energy

Energy costs were defined as those costs which vary with the number of KWH generated and purchased. These costs were allocated to each class of service in proportion to KWH sales to that class.

### (C) Customer Costs

Customer costs were defined as those items of investment and the related expense which were primarily a function of the number of customers served. These include the functional categories of meter investment and expenses, customer accounting and sales expenses, secondary lines, services, and a portion of transformers.

#### **III.** Allocation Factors

Factors were developed to allocate the cost components to the customer classes. In the development of the required allocation factors, a principle of "equivalent level of service" was followed to insure that the customer classes were allocated cost components for only those levels of the system involved in service to their respective customers. For example, the level of service concept insures that an industrial customer who receives service at transmission voltage is not allocated a portion of the distribution system.

## (A) Demand Factor

The factors used in the allocation of the demand component of costs to the various classes of service are:

(i) The Coincident Peak (CP) was used for the allocation of the production and transmission power supply costs. The coincident peak allocation factor was based on the hours of 2:00 p.m. and 6:00 p.m. on the territorial peak day. The contribution of each class of service to the four-hour peak demand was used to determine its coincident peak responsibility. The peak demand responsibility for each class of service was determined by adjusting demands at customer levels by the appropriate loss factors through each voltage level of the system to the generation level.

(ii) The Noncoincident Peak (NCP) was used to allocate the cost of a part of distribution facilities to the various classes. The maximum annual demands of each class of service at customer delivery points was adjusted for losses at the different levels within the system to the transmission system.

## (B) Energy Factor

Energy sales by classes of service were used as the energy allocation factor. This factor is the ratio of sales at the generation level for each class of service.

### (C) Customer Factor

Customer factors were based on the average number and location of customers connected to our system.

### (D) Revenue Factor

Revenue factors were based on the revenues that were recorded for each of the classes of service.

## IV. Allocation of Rate Base Items

The system of accounts followed by South Carolina Electric & Gas Company does not permit all costs to be directly assigned to classes of service. A detailed analysis based on use of electric plant and related operating expenses was necessary to determine the costs incurred in serving the various classes of customers. It should be noted that some of the functional classifications were subfunctionalized where necessary.

Allocation of electric plant begins with an analysis to determine what facilities, if any, can be directly assigned to a particular customer or group of customers. These facilities, since they are for use only by a particular customer or customers, are directly assigned to the class of service to which the customer belongs. These direct assignments are not allocated to the entire system.

#### (A) Production Plant

Production plant was allocated based on the Coincidental Peak (CP) demand allocation factor that represents all KW demands at generation level at the time of the Company's territorial peak.

### (B) <u>Transmission Plant</u>

The Company has two levels of transmission – bulk power transmission and sub transmission. The bulk power transmission consists of all 115 KV and higher transmission facilities. The sub transmission level of service consists of the 46 KV and 33 KV systems.

After determining the facilities that could be directly assigned, the remaining facilities were allocated using the Coincident Peak (CP) demand allocation factor.

### (C) <u>Distribution Plant</u>

Distribution plant was analyzed to determine if any facilities could be directly assigned. The remaining investment dollars were then allocated using the Noncoincident Class Peak (NCP) demand allocation factor at the primary level on the distribution system. Overhead lines in the distribution function were separated into the primary and secondary level. The primary level was considered demand related and the secondary level was considered customer related.

As with overhead lines, the percentage of primary and secondary underground lines was determined through analysis. The allocation of the primary and secondary underground lines was achieved using appropriate class peak demand factors and customer factors.

The Company's records detailed the investment in such items as line transformers, arrestors, switches, and line capacitors. Line capacitors were assigned to the bulk power transmission function in conforming with engineering system design considerations. Following the same considerations, the investment in arrestors was assigned to the primary level. All line transformers and switches were assigned to the secondary function. Using a transformer size of 25 KVA with 4 customers attached, this secondary function was separated into capacity and customer components.

The services account relates to the secondary function and is customer related. Allocation of services was made using the customers at the secondary level excluding the street light customer class.

The assignment of meter investment, installations on customer premises, and street lighting investment was done on a direct assignment basis. A customer weighted factor was used in assigning the meter investment.

## (D) General, Common and Intangible Plant

General plant was divided into land and land rights and other general plant and then allocated to the various classes of service based on total allocated labor, excluding administration. Intangible and common plant investments were allocated to the various classes using the same method used to allocate the general plant investment.

## (E) Accumulated Provision for Depreciation

The accumulated provision for depreciation was available by function from the Company's records. Allocation was made on the basis of total allocated plant in service less land and land rights.

## (F) Material and Supplies

The fuel inventory of materials and supplies was assigned to the energy component and allocated on annual kilowatt-hour sales at the generation level. The remaining materials and supplies items were assigned and allocated on the various allocated plant-in-service accounts to which the items relate.

## (G) Working Cash

An allowance for cash working capital was included for operation and maintenance expenses, excluding purchased power, in proportion to the allocation of those items to each class of service.

## (H) Prepayments

Prepayments were divided into three areas: payments related to plant-in-service were allocated on total allocated plant-in-service, payments related to other taxes were allocated on total allocated other taxes, and payments related to retail sales were allocated on revenue derived from retail sales.

# (I) Accumulated Deferred Income Taxes

Accumulated deferred income taxes, generally from liberalized depreciation, were analyzed and divided into three functions – production, transmission and distribution, and general and common – and allocated on applicable plant-in-service.

## (J) Average Tax Accruals

Average tax accruals were allocated using a factor comprised of the total of the allocated other taxes, state income taxes, and federal income taxes.

## (K) Customer Deposits

Customer deposits are directly assigned, based on an analysis of customer deposits by class of service.

## (L) <u>Injuries and Damages</u>

Injuries and damages were allocated to each class of service on total allocated plant-in-service.

### V. Allocation of Return Items

## (A) Operating Revenues

Revenue from sales of electricity was assigned directly to the classes of service. Short-term opportunity sales represent revenues derived from sales under special contract to be delivered at the option of the Company at off-peak times. The energy component of revenue from these sales was allocated on sales of energy at the generation level and the demand component on the Coincident Peak (CP) allocation factor. Revenue from forfeited discounts was allocated based on an analysis of uncollectible accounts. The remaining operating revenues were either assigned directly or allocated on the basis of functional plant.

# (B) Operation and Maintenance Expenses

Production plant expenses were assigned to the demand component with the exception of fuel used in electric generation and certain expenses considered by FERC to be energy related, which were allocated on sales of electricity at the generation level. Supervision and engineering expense for steam, hydro, and other production were assigned to the operation and maintenance expense categories based on the respective labor expense within each of these categories. Purchased power was analyzed for separation into capacity and energy components. The energy allocation factor was used to allocate the energy component and the Coincident Peak (CP) demand allocation factor was used to allocate the capacity component.

Transmission operation and maintenance expenses were assigned to the transmission function within the various categories of expenses and allocated on the

appropriate plant allocation factors. Supervision and engineering expenses were allocated to the operation and maintenance expense categories based on the respective labor expense within each of these categories.

Customer accounts and customer service and information expense includes all expenses incurred for servicing each customer's account. The supervision expenses for these accounts were allocated based on the respective labor allocations. Other related expenses were allocated based on customer weighted factors.

For sales expenses, the supervision account was allocated based on the labor expense within the sales expense account. The remaining expenses were allocated on the basis of analysis by those departments incurring the expenses.

Administrative and general expenses that relate directly to wages such as employee benefits were allocated on the basis of labor expenses. Regulatory expenses were separated into wholesale and retail. The retail and wholesale portions were analyzed and allocated on appropriate plant-in-service allocators. Supervision was allocated based on the labor expenses within the administrative and general expenses.

## (C) <u>Depreciation Expense</u>

Depreciation expenses were separated into the functional categories of steam, hydraulic, and other production, transmission, distribution, general and common. Each functionalized category was allocated on the respective plant accounts excluding land.

### (D) Taxes Other Than Income Taxes

These taxes were comprised of the electric portion of certain federal, state, and local taxes. Federal payroll taxes, including FICA, federal income taxes and unemployment insurance, were allocated on total labor factors.

State taxes related to revenues were allocated on total operating revenue. Special utilities license, foreign corporations license in Georgia, and miscellaneous state taxes were allocated on total plant-in-service. Generation tax was specifically assigned to those classes for which sales were subject to the tax. State payroll taxes were allocated on total labor factors. Retail licenses were allocated on total jurisdictional plant-in-service.

Local taxes included county and municipal property taxes. Property taxes were allocated on total plant-in-service.

## (E) State Income Tax Liability

Allocated operating income before income taxes was developed from previous revenue and expense allocations. State income tax was calculated at the statutory rate for each class of service.

### (F) Federal Income Tax Liability

Development of the federal income tax liability began with operating income before income taxes. State income tax was allocated directly to each class of service and deducted. Federal income tax was computed at the statutory rate for each class of service.

### (G) Deferred Income Taxes (Net)

The net of the provision and amortization of deferred income taxes was separated into functional categories and allocated appropriately.

### (H) Investment Tax Credit (Net)

Investment tax credit net of the provision and amortization was separated into functional categories and allocated on the appropriate allocated functionalized plant-inservice.

## (I) Customer Growth

Customer growth recognizes the change in the number of customers throughout the test year. The ratio of average to period-end retail customers was developed and applied to the retail operating return. The resulting return amount was directly assigned to each class of customers on a pro-rata basis, calculated on the operating return of that class.

#### (H) Interest on Customer Deposits

These deposits were allocated on the basis of a customer weighted factor developed from an analysis of the deposits

## **Accounting and Pro Forma Adjustments**

The accounting and pro forma adjustments are those set forth in Exhibit D-II, page 3 of 3 in the Company's Application and as presented in Mrs. Walker's testimony.